

# HONEYWELL WMS COLD CHAIN

**Honeywell**



# COLD CHAIN CUSTOMER

**Honeywell**

# □ FOOD/ COLD CHAIN □

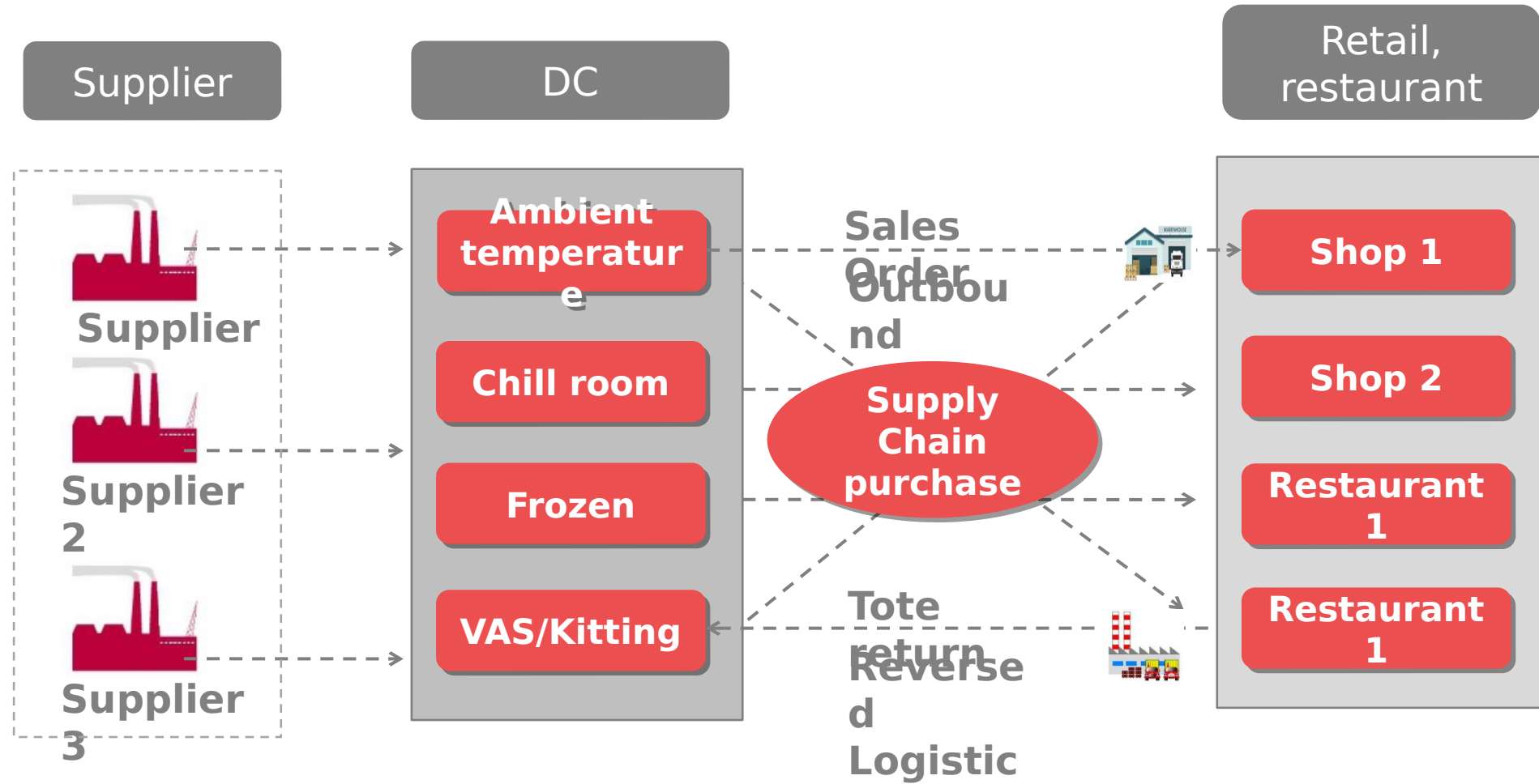




# COLD CHAIN OPERATION FLOW

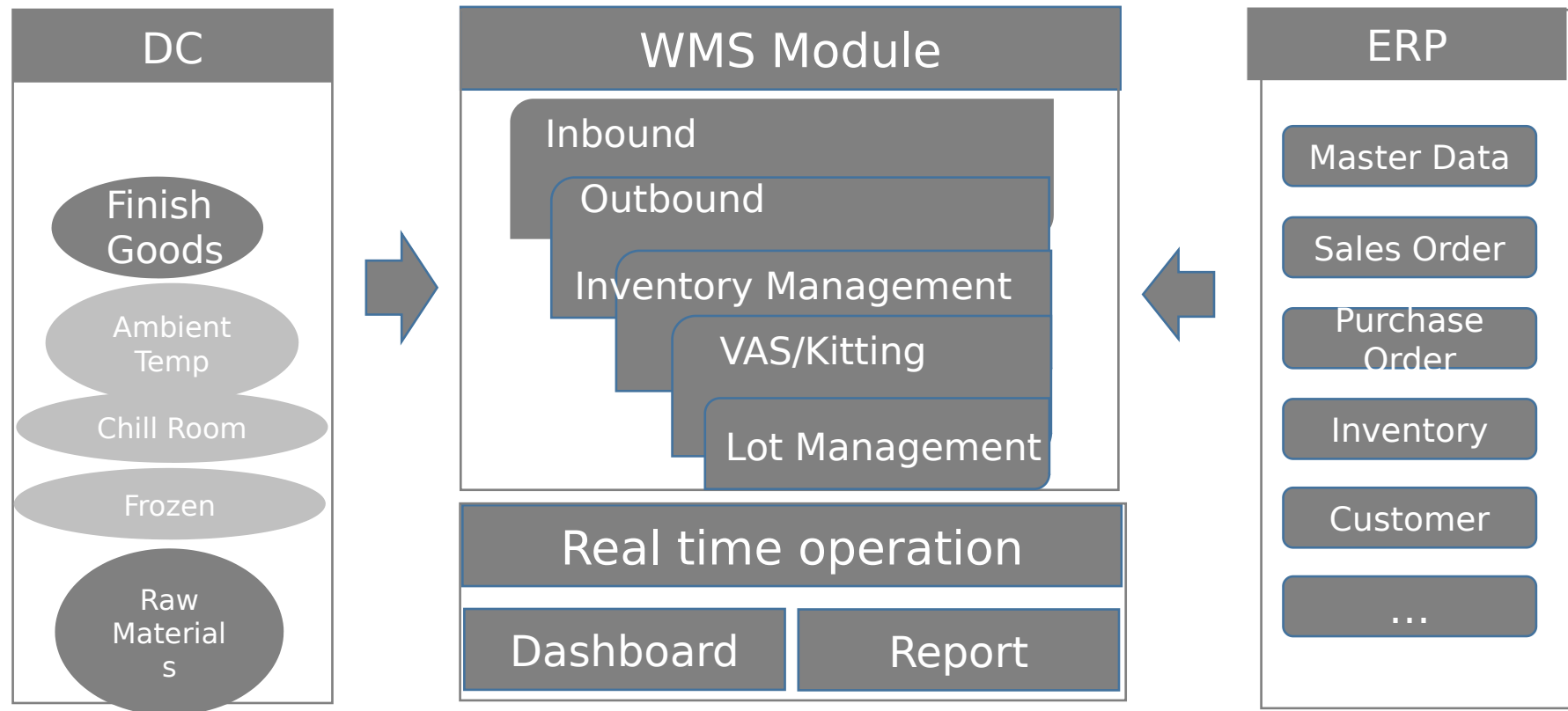
# COLD CHAIN OPERATION FLOW

5



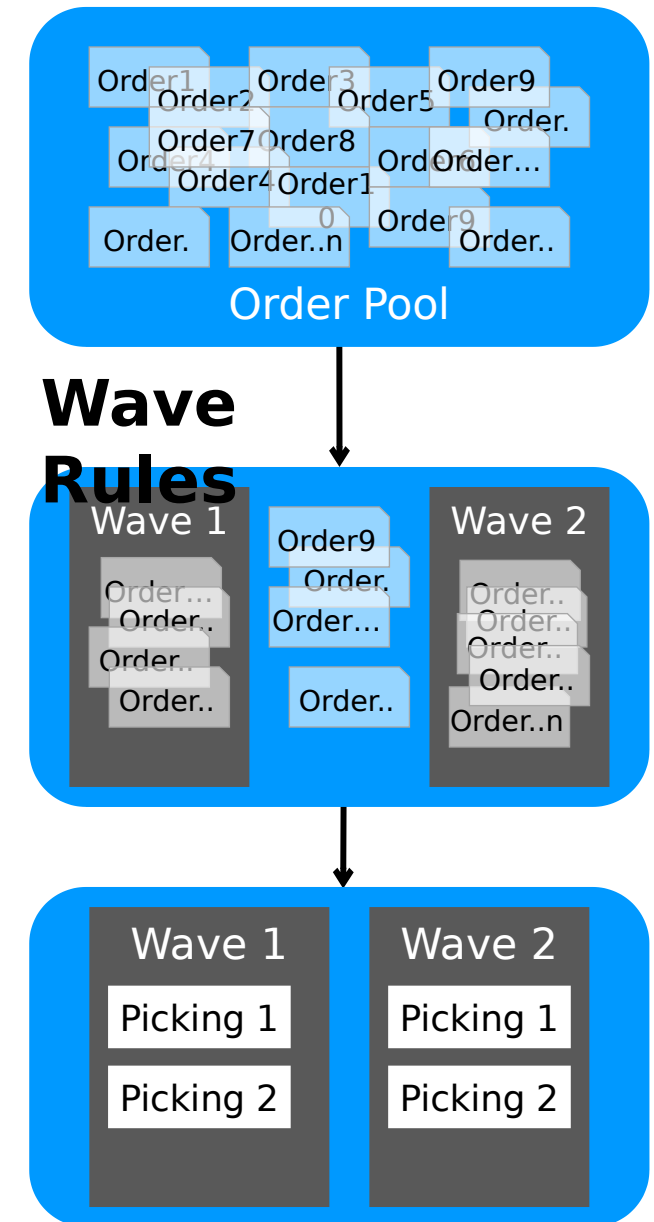
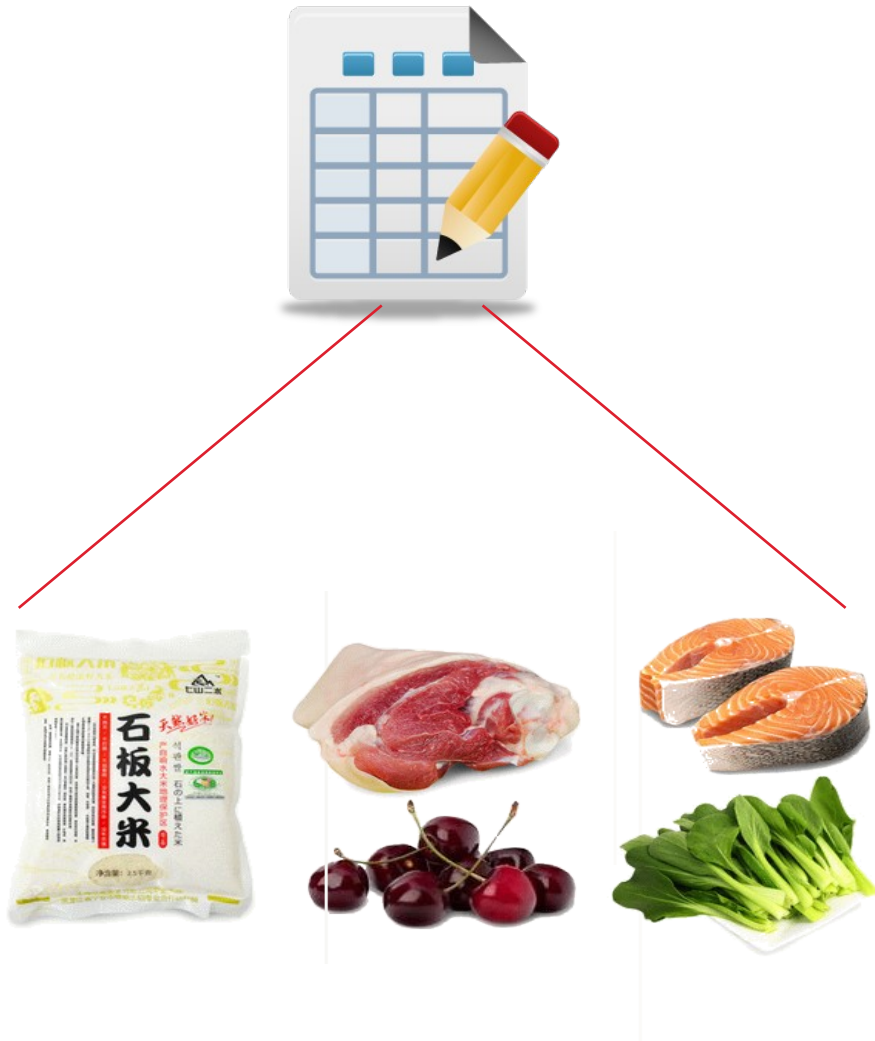
# WMS COVERAGE

6





# ORDER ALLOCATION



| No | Section             | Improvement                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Basic Management    | <ul style="list-style-type: none"> <li>1 □ Multiple Zone □ Chill □ Fresh fruit □ Daily □ Frozen □ Raw Material □</li> <li>2 □ Master data □ Location □ Zone □ shelf life □ Packaging □ Barcode □ Rules □□</li> <li>3 □ Standardize Operation □ Less Human demanding □</li> </ul>                                                                                                                                                   |
| 2  | Optimization        | <ul style="list-style-type: none"> <li>1 □ Inventory distribution □ leverage distribution, percentage distribution □</li> <li>2 □ BOM/ Kitting □ BOM and VAS service in DC □</li> <li>3 □ Picking Optimization □ Sorting while Picking, Voice Picking, Pallet Pick, picking patch Optimization</li> <li>4 □ Wave Optimization □ by route, by store, by SKU, by weight □</li> <li>5 □ Cross Dock: reduce Stock turn over</li> </ul> |
| 3  | Management          | <ul style="list-style-type: none"> <li>1 □ Real time operation □ Real time dashboard</li> <li>2 □ Management Report □</li> <li>3 □ Warehouse Operator KPI □</li> <li>4 □ Standardize Operation</li> <li>5 □ Data Visibility</li> </ul>                                                                                                                                                                                             |
| 4  | Tracking            | <ul style="list-style-type: none"> <li>1 □ SKU management ; Lot tracking, Serial No Tracking □</li> </ul>                                                                                                                                                                                                                                                                                                                          |
| 5  | System Architecture | <ul style="list-style-type: none"> <li>1 □ Mature Product, Flexibility, Scalability, platformism □</li> <li>2 □ Support Multiple System Integration □ OMS, TMS, WCS,ERP,....</li> </ul>                                                                                                                                                                                                                                            |



# LOT ATTRIBUTE

| LOTATT Label    | LOTATT Label... | Rf Show                             | LOTATT Flag | Lot Type | LOTATT Value |
|-----------------|-----------------|-------------------------------------|-------------|----------|--------------|
| Production Date | MAN.DATE        | <input checked="" type="checkbox"/> | Disable     | Date     |              |
| Expiration Date | EXP.DATE        | <input checked="" type="checkbox"/> | Disable     | Date     |              |
| Receiving Date  | RCV.DATE        | <input checked="" type="checkbox"/> | Mandatory   | Date     |              |
| LOTATT04        | LOTATT04        | <input checked="" type="checkbox"/> | Disable     | Char     |              |
| Cust. SKU       | Cust. SKU       | <input checked="" type="checkbox"/> | Optional    | Char     |              |
| PO#             | LOTATT06        | <input checked="" type="checkbox"/> | Optional    | Char     |              |
| Batch Lot       | LOTATT07        | <input checked="" type="checkbox"/> | Optional    | Char     |              |
| Damage          | Damage          | <input checked="" type="checkbox"/> | Optional    | Char     | Good/Damage  |
| LOTATT09        | LOTATT09        | <input checked="" type="checkbox"/> | Disable     | Char     |              |

Form Details Picking Location Multi-Warehouse

Main Info Control SerialNO Management User-defined Other

Pack ID 1/20/480

Lot ID MF1 Standard Lot Infor

QC Point

QC Time

Efficiency(CS/h)

- Inventory Lot Information
- Full cycle management on:
  - Receiving Date
  - Manufacturing Date
  - Expiry Date
  - Vendor
  - Inventory status
- Near expiry notification
- Inbound / outbound checking
- Picking / replenishment rotation
- Record Temperature

# PICKING METHOD



Chilled

Frozen



Fruit

Vegetable



Dry food

Chilled room & Frozen Area  
can use Voice Picking or  
paper base picking to  
release the hand due to low  
temperature and overweight

Fresh food normally  
can cross dock and  
distribute direct thru  
PTL to reduce the time  
frame and increase the  
efficiency

Dry food can pick thru  
normal operation by RF  
thru wave picking, pick  
by order or the rules set  
in wave rules.



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The Power of Connected

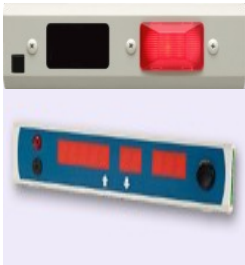
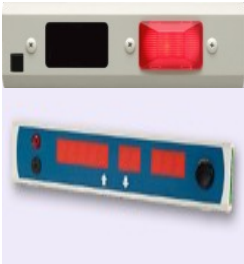
**Picking List**      Date: 2020/03/27 03:32:21 PM  
Order Number: S0000002

Customer ID: HLS  
Warehouse ID: HLS\_DEMO(Production)  
Cust Ord No:  
Order Type: Shipment Order

Consignee: HLS-Consignee  
Address: Level 27,UOA Corp Tower

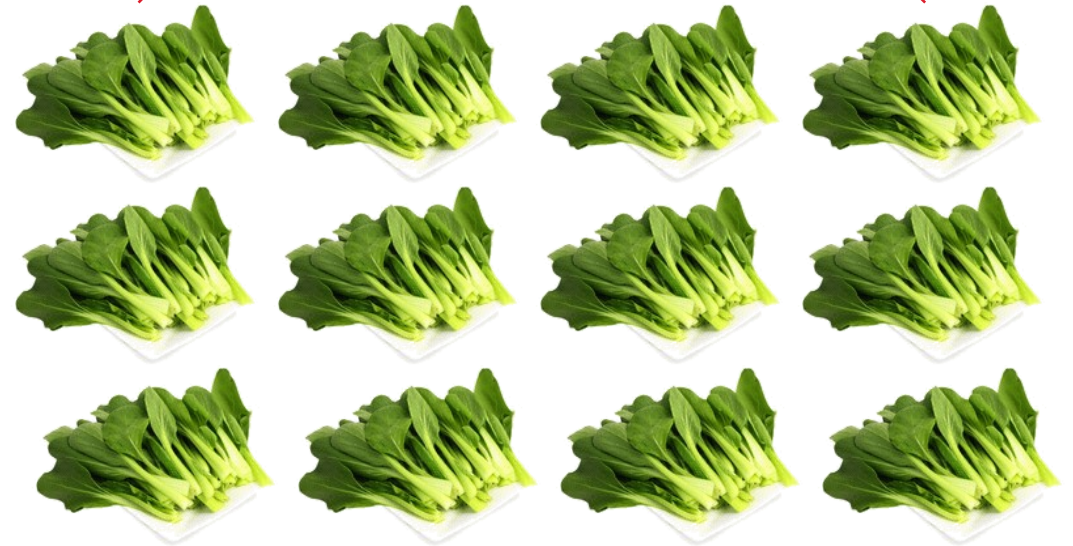
Contact Person: TCL  
Contact Tel: 03-2777 3102

|        | SKU Code     | SKU Descr  | Package ID   | UOM  | PK Qty    | To Loc | From Loc | GW           | Cubic  | Traceld | Man Date   | Batch No. | Exp Date   | Lot ATT05 | Info Date  | Stock Con. |
|--------|--------------|------------|--------------|------|-----------|--------|----------|--------------|--------|---------|------------|-----------|------------|-----------|------------|------------|
| 1      | 885025735468 | Electronic | 885025735468 | Each | 50        | 1030   | C01-01-A | 750          | 900000 | 000003  |            |           |            | N         | 2020-03-03 |            |
| 2      | 885711252002 | Food       | 885711252002 | Each | 50        | 150    | A01-02-A | 15           | 5000   | 000002  | 2020-03-23 |           | 2021-03-23 | N         | 2020-03-23 |            |
| Total: |              | Total Qty: | 50           |      | Total GW: | 15     |          | Total Cubic: | 5000   |         |            |           |            |           |            |            |



# WEIGHT PICKING-CROSSDOCK

- Weight Receiving □ Cross-dock □
- System auto allocation
- Weight Picking (Cross-dock)
- Real time Print out SKU label
- Real time deduct inventory





# CROSSDOCK SORTATION/WAVE PICK

- **Direct cross-dock to sortation area and sort to orders**
- **Wave picking to for high coincide SKU and reduces congestion in picking area**



# KITTING/BOM/VAS

- BOM management

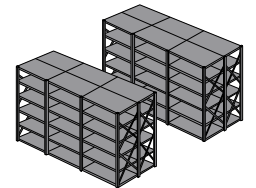
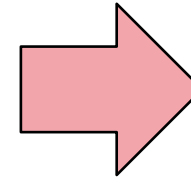
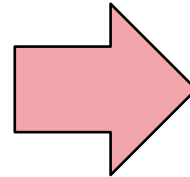
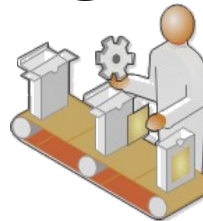
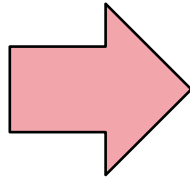
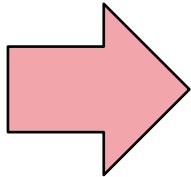
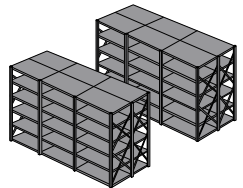
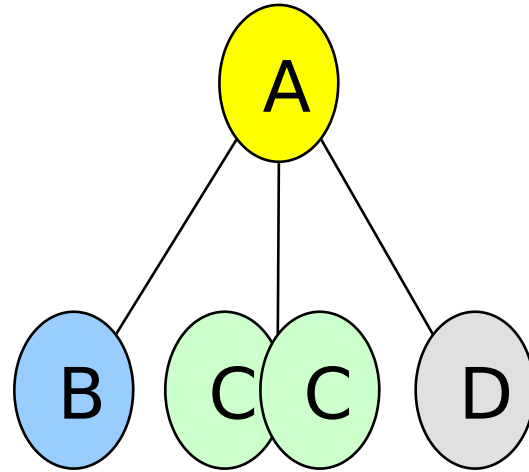
- Parent-Child

- VAS

- Labelling

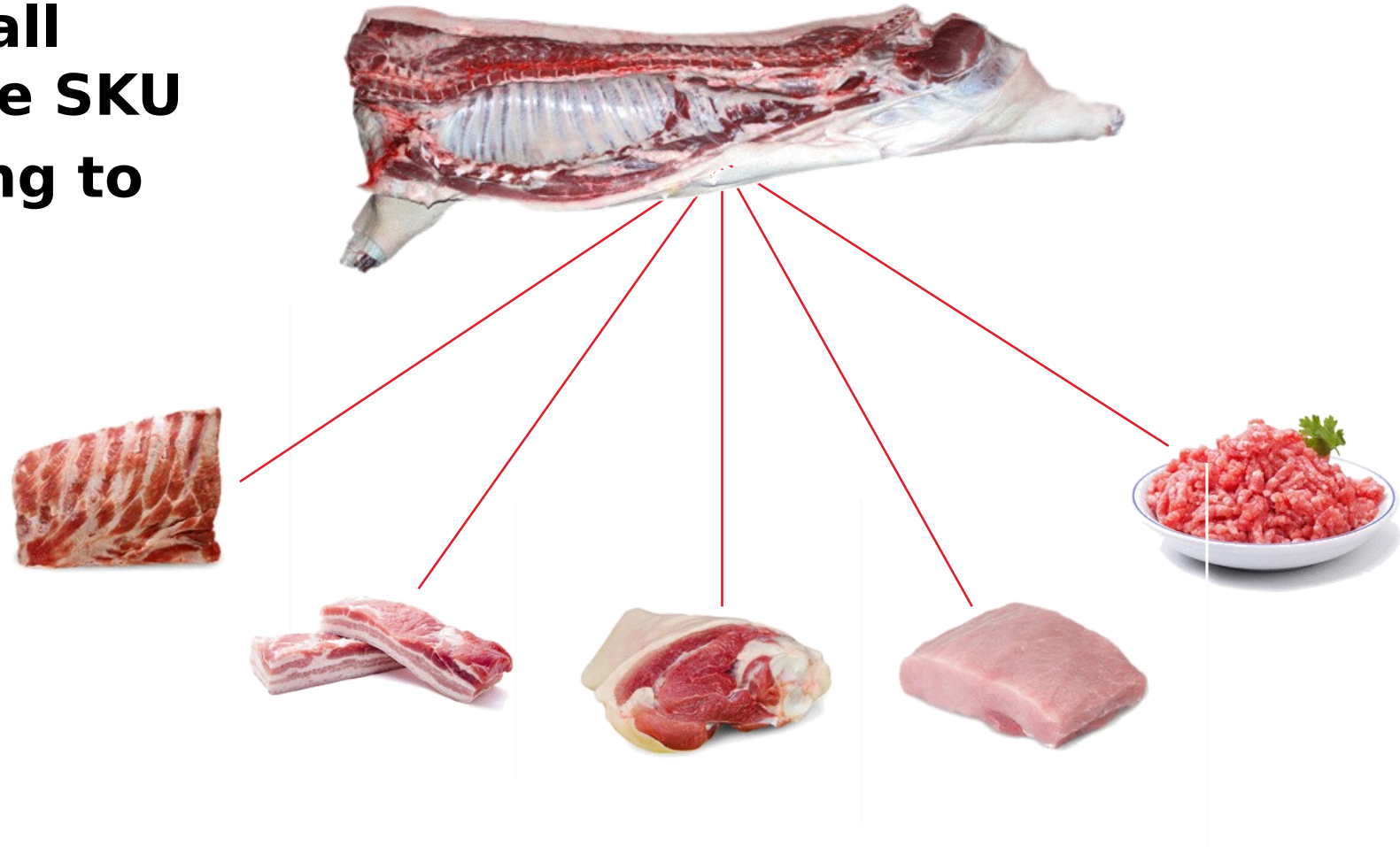
- Repacking

- Special QC



# RAW MATERIAL REPACKING/REPRODUCT

- **Divided to slice or small piece and remain same SKU**
- **Reproduce or repacking to different SKU**





# COMBINATION

- **Combine different product to new SKU (Parent-Child)**
- **Grouping 2 same SKU to new SKU**



## Rotation rules

FIFO

FEFO

LOT attribute

## Soft allocation

Allocation according to batch

Allocation according to package

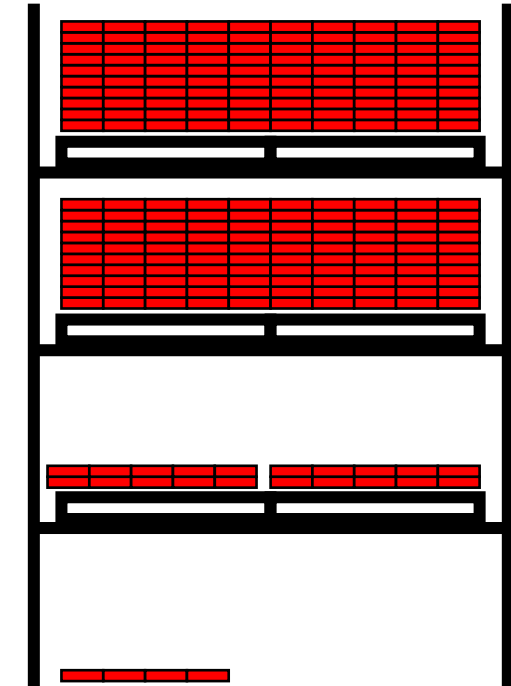
Lock inventory

## ALLOCATION

Case pick or Loose Pick

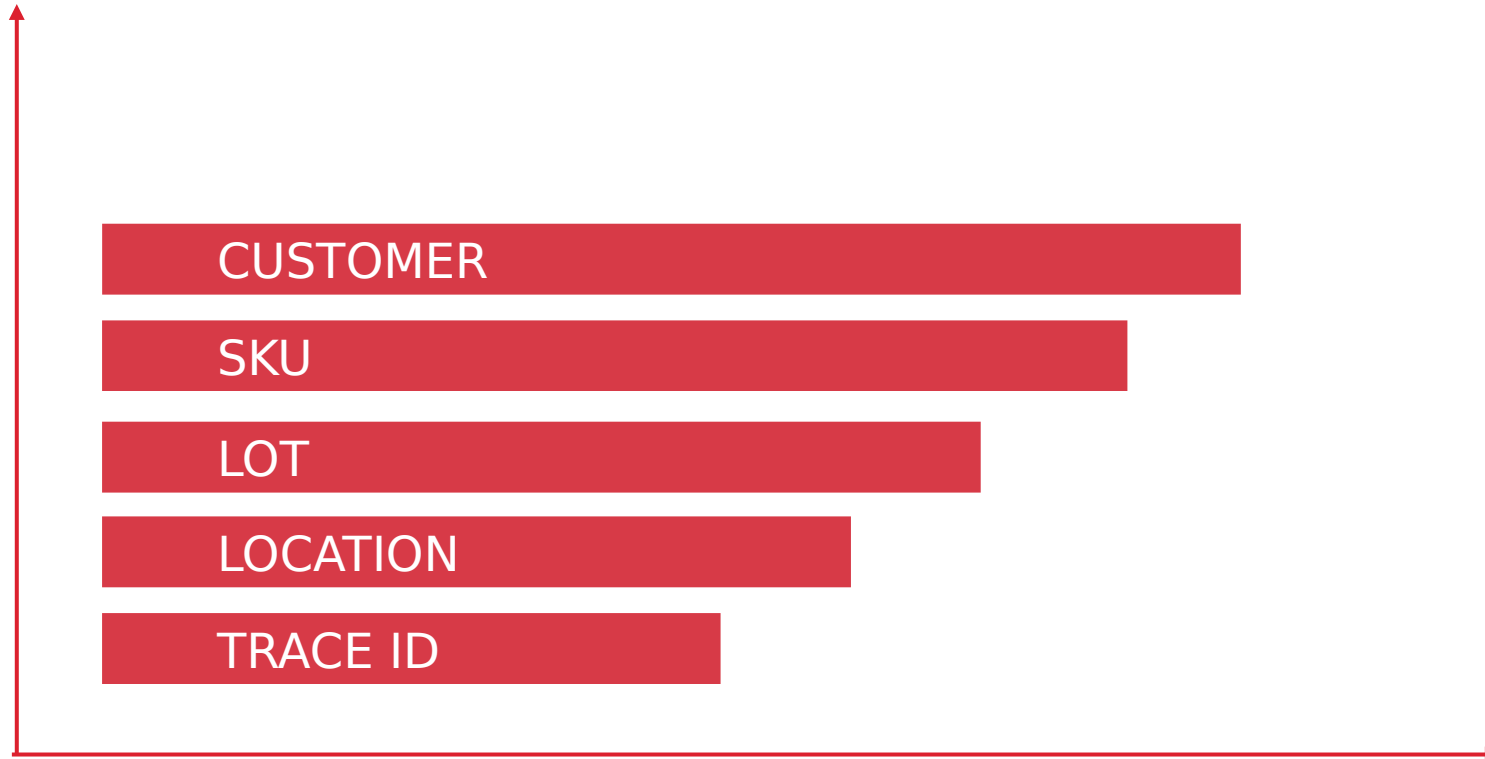
One time replenishment or two time replenishment

Pick to store , Pick to order or Wave Pick



# INVENTORY INFO COMBINATION- 5 LEVELS

17



5 level information good for quality control and tracking

# PALLET/CARTON RECEIVING

- **Reduce receiving time**
- **Reduce spaces utilize**
- **Support crossdock**
- **Reduce man power**



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## ASN Tally Sheet

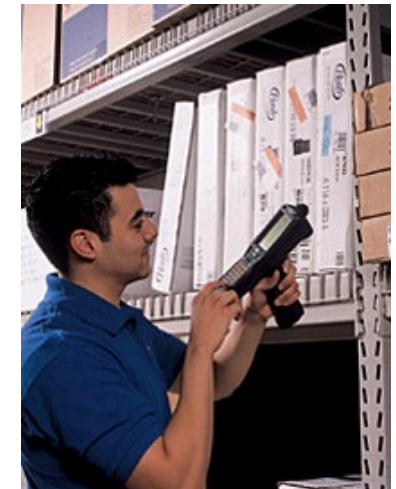
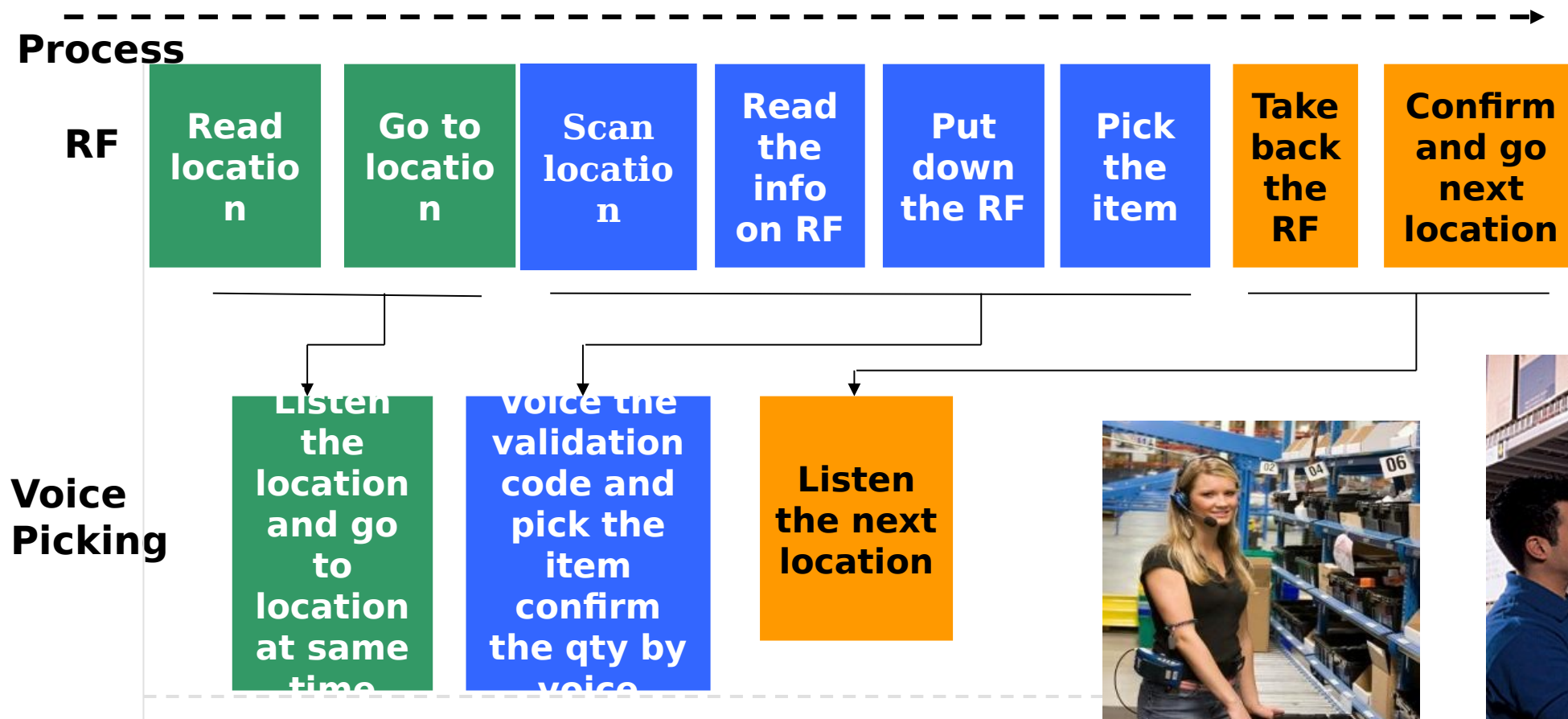
Customer: HLS  
Customer Order No :  
Warehouse ID: HLS\_DEMO(Production)  
Order Type: Purchase Order

Date: 2020/03/27 03:30:50 PM

ASN No :   
ASN000007

| No | SKU Barcode                                                                           | SKU<br>SKU Description     | Expected Qty<br>Ti*Hi   | Pack ID<br>UOM         | Man. Date<br>Inb. Date   | Exp. Date<br>Batch Number |
|----|---------------------------------------------------------------------------------------|----------------------------|-------------------------|------------------------|--------------------------|---------------------------|
| 1  |    | 885025735468<br>Electronic | 25<br>9.0000 * 1.0000   | Electronic<br>Pallet   | 2020-03-23<br>2020-03-23 |                           |
| 2  |    | 885711256839<br>Chemical   | 150<br>12.0000 * 5.0000 | Chemical<br>Inner Pack | 2020-03-23<br>2020-03-23 | 2021-03-23                |
| 3  |    | 885711252002<br>Food       | 1000<br>9.0000 * 6.0000 | Food<br>Each           | 2020-03-23<br>2020-03-23 | 2021-03-23                |
| 4  |    | 885711252753<br>Other      | 3000                    | Other<br>Each          | 2020-03-23               |                           |
| 5  |  | 885025735005<br>Cosmestic  | 200<br>12.0000 * 6.0000 | Cosmestic<br>Carton    | 2020-03-23<br>2020-03-23 | 2021-03-23                |

# VOICE PICKING VS RF





# VOICE PICKING IN WAREHOUSE OPERATION

## Case/Pallet Picking

- Easy handle overweight item
- Easy handle for Forklift driver
- Avoid non proper operation process

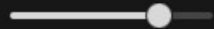
## Put-To-Store

- Release hand for scanning
- Increase picking efficiency
- Avoid disturb in crowd area

## Fresh and Frozen

- Cross-Dock
- Easy handle for de-palletize and palletize
- Easy the work in frozen area(may need to wear glove)

# Voice vs. RF



# FROZEN WAREHOUSE

- Support multiple picking method
  - Put-to-Store
  - Wave Pick
  - Case & Pallet Pick
- Work under low temperature
- Noise cancelling

